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THIRTEENTH QUARTERLY PROGRESS REPORT
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THIRTEENTH QUARTERLY PROGRESS REPORT

by

James W. Hanson

In the previous reporting period the work in the field of linear programming and multivariate approximations entered the applications phase in which previous theoretical work was to be implemented and evaluated. This practical portion of the effort continued throughout this reporting period. Extensions are being made to existing linear programming packages which will adapt them to the iterative procedures required to test these theoretical algorithms. As soon as this task is completed a number of test cases will be run and compared to previous results which were obtained by other types of approximation schemes.

The work on a computer algorithm for handling the collection of terms, canceling, and dividing out common factors in algebraic expressions was completed during this quarter. This algorithm has now been programmed and completely checked out and has worked well on a number of examples. An algorithm is now being developed to factor expressions and will soon be added to the overall symbol manipulation package. Algorithms for the simplification of terms involving the various transcendental functions such as exponentials and trigonometric functions are also under investigation.

Theoretical work in the field of partial differential equations continued throughout this period with some progress being made. Also the Raleigh-Ritz method was applied to the basic flat-earth adaptive guidance problem in order to investigate its applicability. This work is still being continued with the first empirical results being expected soon.

During the period of this report 726 man-hours were expended.